

To the Chairman of a Scientific Jury
appointed by order of the Executive Director
of UMBALSM "N.I.Pirogov"
No RD 26-1165/05.05.2021

Review

From Prof . Borislav Georgiev Georgiev, MD PhD,
Head of the Cardiology Clinics, MHAT "National Heart Hospital" Sofia,
Member of the scientific jury for the competition for the acquisition of the academic position
"Professor" in the field of higher education 7. "Health and Sport", professional field 7.1."Medicine"
and scientific specialty "Radiology" at The Clinic of Radiology of UMBALSM "N.I.Pirogov",
announced in the State Gazette 19/05.03.2021

There is only one candidate for the above mentioned competition - Assoc. prof. KAMELIA GENOVA, M.D. PhD, Medical Manager of SMDLOD "N.I.PIROGOV" AT UMBALSM "N.I.PIROGOV". The presented documents by the applicant are in accordance with the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria for acquiring the Academic position "Professor" and with the Rules for the Development of the Academic Staff in UMBALSM "N.I.Pirogov" EAD. I do not find any gaps in the submitted documentation and I declare that I don't have joint scientific work with the applicant.

Short CV data of the applicant

KAMELIA GENOVA graduated in medicine from MU-Sofia in 1991. Dr. KAMELIA GENOVA received her PhD degree in 2015 after successfully finishing her work on the topic: *"Assessment of the morphology and function of the right heart after radical repair of Tetralogy of Fallot and in arrhythmogenic cardiomyopathy with cardiac magnetic resonance"*. Since 2016 she has held an academic position "Associate Professor" in the scientific organization of "National Heart Hospital" EAD. From 2010 to 11.2019 she worked in the Radiology Department at National Heart Hospital, where she was also Head of the Department, and since December 2019 Assoc. prof. Genova works at UMBALSM "N.I.PIROGOV", SMDLOD "N.I.PIROGOV".

1. Research

1.1. Publications.

Assoc. prof. Genova has presented:

- Author's monograph in Bulgarian entitled *"Cardiomagnetic Resonance Tomography"*, 2020
- 3 chapters in co-authorship or as a single author in textbooks
- 6 chapters in monographs and books
- 30 real full-text publications, including 3 English publications (including in impact factor journals)
- 16 research abstracts

1.2 Scientific forums.

Assoc. prof. Genova has presented 16 published summaries of research and 37 lectures and plenary lectures from Bulgarian and international scientific forums.

1.3 Authorship and citations

Total impact factor, citation indices:

Total impact factor of periodicals – 3.78

Citation indices, reference from the Central Medical Library (No RT 136/ 14.04.2021):

- 11 Bulgarian citations

Citation Index in International Scientific Publications

- 10 English citations in Web of Knowledge and Scopus databases (no self-citations) and 1 in other databases.

1.5 Participation in committees, working and expert groups

☑ Representative of Bulgaria in the Education Committee of the European Radiology Association

☑ Member of advisory board for the diagnosis, follow-up and treatment of patients with Fabry disease

1.6 Participation in exam boards

• Since 2015 – member and chairman of exam boards for trimestrial and state exams of students from Yordanka Filaretova University, specialty X-ray technician.

1.7 Participation in scientific juries

Member of a jury for the acquisition of a scientific degree "PhD" of Dr. Dora Kishkilova, member of a jury for the acquisition of the scientific title "Associate Professor" of Dr. Desislava Kostova-Lefterova.

1.8 Participation in scientific projects

➤ Project Manager "Raising awareness of Fabry disease among specialists 30 in imaging and screening of high-risk patients". Illumina Foundation

➤ Participant in the project "Electronic register for patients with transthyretin amyloid cardiomyopathy. Society of Cardiologists in Bulgaria.

➤ Participant in the project "RER6032 Strengthening Quality Assurance and Quality Control in Diagnostic X rays IAEA""

➤ Participant in the project "RER9132 Strengthening Member State Technical Capabilities in Medical Radiation Protection IAEA. Oracle Project Number:3060460 (RER9132)

➤ Participant in project "Project RER9/147 "Enhancing Member States' Capabilities for Ensuring Radiation Protection of Individuals Undergoing Medical Exposure".

➤ Participant in the project "IAEA Study on use of CT in patient with COVID-19 pneumonia"

2. Profile of research, practical and applied activities

In accordance with the profile of scientific work in Radiology Clinic, to which the place of professor, Assoc. prof. Genova works mainly in the field of magnetic resonance tomography and computed tomography. She has 25 years of practical experience in diagnostic activity in imaging.

Associate Professor at the Clinic of Radiology with training of two specialist doctors and head of magnetic resonance tomography sector with training of all physicians in the imaging clinic on the magnetic resonance tomography module.

3. Most significant scientific contributions

Main scientific and scientific and applied contributions

Contributions from the publications are presented, grouped by topic, in connection with the author's work in the fields: cardiomagnetic resonance tomography, computer tomographic diagnosis of cardiovascular diseases, diagnosis of lung diseases, non-invasive assessment of atherosclerotic plaque, neuroradiology, application and specificity of new magnetic resonance imaging techniques, musculoskeletal radiology, urology, rare diseases, radiation protection and optimization of CT protocols in pediatric patients.

I. Scientific contributions in the field of cardiomagnetic resonance tomography

I.I. Scientific contributions in this area are related to: evaluation of the morphology and function of the right heart in diseases involving the predominant right heart (patients with congenital heart disease and cardiomyopathies) and the validation of the method in these diseases. (1, 3, 4, 5, 6, 24, 45, 70, 74, 82, lectures 7, 9, 11, 12)

Original scientific and theoretical contributions:

1. The mechanisms of damage to the right ventricle in patients after radical correction of the tetralogy of Fallot (TF) and with arrhythmogenic right ventricular cardiomyopathy based on the results of cardio MRT studies were analyzed.

2. The dynamics of changes in the right ventricle with age increase after radical correction was investigated and the importance of age in radical correction and remote results in patients with tetralogy of Fallot were demonstrated.

3. Structural changes in the right ventricle are analyzed and the relationship between the severity of change in hemodynamic indicators and the degree of development of fibrosis in the myocardium as an important biomarker in patients after radical correction of tetralogy of Fallot and with arrhythmogenic right ventricular cardiomyopathy is proven.

Confirmatory contributions:

1. Accuracy has been proven and the place of cardio MRT has been confirmed in patients with diseases predominantly engaging the right heart.

2. A comparative analysis has been carried out and the correlation between the results of cardio MRT and ultrasound methods and right cardiac catheterization has been confirmed.

Scientific and applied contributions:

1. An algorithm for analysis and processing of cardio MRT studies in indications - evaluation of the right heart is proposed.

2. A standardized protocol for cardio MRT examination has been developed.

3. A clinically adapted cardio MRT protocol has been developed in these groups of diseases.

I.II. Other contributions of the author in the cardio MRT department are related to the evaluation of patients with coarctation of the aorta and other congenital and acquired cardiovascular diseases [BP 3, 4, 5, 6, 7, message 5, lectures 1, 4, 5, 6, 8, 13, 16, 17]. The author has a number of publications and lectures on cardio MRT in myocardial diseases - inflammatory, non-ischemic and ischemic cardiomyopathies, storage diseases. Mainly, the contributions to these publications and

communications are scientifically applied in connection with the study and application of cardio MRT in cardiovascular disease, as a new method for the country. The role of the method in different groups of diseases, the specifics and technique of the study, the different types of findings and their interpretation, the indications for the application of cardio MRT are discussed and analyzed. (5-9, 12, 16-18, 21, 22, 41, 43, 57, 61, 64, 67, 68, lectures 1, 4-6, 8, 13, 16, 17, 23, 26-30, 32, 40-43, 46, 49, 50, 54, 56)

The author participates in the development of a diagnostic algorithm and the creation and management of a national register of patients with cardiomyopathies under the auspices of the Bulgarian Society of Cardiology with performing and analyzing magnetic resonance imaging studies in these patients and in particular in patients with amyloidosis. (58, lectures 45, 52)

I.III. The author has a special interest in rare diseases with cardiac involvement – Andersson-Fabry disease, Pompe disease, Duchenne's disease, Dannon's disease. Contributions to this field are related to raising awareness among imaging specialists for early recognition of these diseases, as well as to studying the mechanisms and pattern of cardiac involvement and prognostic imaging markers – a problem with insufficient data in international literature (95, lectures 20, 53, 55).

I.IV. The author summarizes and analyzes the data from her work over the last fifteen years in monographic book "Cardiomagnetic resonance tomography" (Ed. Arbilis, 2020, Sofia, p. 246, ISBN: 978-619-7063-43-1). This is the first monograph in the field in our country. The book consistently presents the principles of magnetic resonance imaging and the possibility of depicting myocardial changes in the main groups of diseases and conditions: arterial hypertension, ischemic heart disease, non-ischemic myocardial involvement, pericardium diseases, tumors, valve and congenital heart diseases. Each section presents the changes on which the diagnosis takes place, describing the protocols for carrying out the diagnostic studies and the necessary data, which must contain the description of the finding. The relationship with clinical necessity is outlined and the contributions and limitations of the method are presented, based on their own experience and analysis. The contributions of individual sequences to a clinical situation and those of modern software are also clarified. The data from the scientific literature are reflected – bibliography includes 370 citations in its vast majority published after 2000. The book is richly illustrated entirely with its own images. The content lays out the basics of the method in cardiac pathology and develops them to the achievements of modern times.

II. Scientific contributions in the field of non-invasive evaluation of atherosclerotic plaque

Scientific contributions in this field are related to the determination of the diagnostic value of non-invasive imaging methods (multidetector computer tomography and magnetic resonance tomography) in the study of the morphology of atherosclerotic plaque against a reference standard pathohistological examination of carotid endarterectomy material; establishing protocols for the study and interpretation of CT and MRT studies, as an important part of the algorithm for diagnosis and treatment of extracranial carotid stenosis. (14, 25, 28, 30, 81, lectures 14, 15, 19).

Scientific and theoretical contributions:

1. A comparative study shall be carried out directly on three imaging studies with a reference standard of pathohistology.

Confirmatory contributions:

1. The morphology of the carotid plaque with MDCT and MRT shall be investigated and evaluated.
2. The diagnostic value of the methods for determining the vulnerability of carotid atherosclerotic plaque shall be demonstrated.

Scientific and applied contributions:

1. Protocols for MRT and MRT studies have been established and optimized in determining the morphology of atherosclerotic plaque.
2. An algorithm for analysis of MRT based on correlation with pathohistology of the study results has been created.

Other contributions of the candidate to the study direction of atherosclerotic plaque are in the direction of determining the morphology of coronary plaque with MDCT, optimizing the research and analysis protocols [11, abstracts 7, 8, 9, lectures 10, 19]:

1. An analysis of the morphology and spread of atherosclerotic coronary plaques established with CT coronary artery has been carried out.
2. The role of the application of vasodilators in improving the depiction of peripheral sprigs of the coronary arteries has been studied.
3. The principles have been analysed and the location and possibilities for the application of the new methods of diagnosis of the vulnerable coronary plaque have been discussed.

III. Scientific contributions in the field of neuroradiology

The main contributions in this regard are applied, educational, related to the study and description of rare syndromes and diseases and the application of new imaging techniques [9, 17, 24, 25, 26, abstracts 1, 3, 4, 12, 13].

1. They are described synthesized as techniques, diagnostic value and application and illustrate the different imaging methods (conventional radiology, angiography, computed tomography, magnetic resonance tomography, radioisotope methods) used for diagnosis in neurology. (15, 20)
2. Describes, overview and discussion of our experience in diagnostics in several rare clinical cases - Charles Bonnet syndrome; basillary artery fenestration; spinal epidural lipomatosis; body dysgenesis; two spontaneous spinal epidural hematomas; Persson heart attack; diagnosis of brain death and current donor problems. (29, 36, 38, 41, 47, 54, 77, 78, 85, 87)
3. Description and discussion of the possibilities of new magnetic resonance imaging techniques for the diagnosis and characterization of brain tumors and tumor-like lesions - diffusion (DWI) and diffusion tensor imaging (DTI), contrast and bolus perfusion (DCE, DSC, ASL) and spectroscopy (MRS). (56)
4. An analysis of the modern imaging of processes in the third ventricle is presented. (23)

IV. Scientific contributions in the field of imaging of vascular diseases

A contribution in this area is the description and analysis of methods of imaging of diseases of the aorta and peripheral vessels, commenting on the imaging methods, protocols and main findings in different types of pathology. (12, 21, 19, 32, 42, 98, lectures 2, 3) The study of rare diseases of the vessels such as Takayasu arteritis, as well as work in the field of planning and monitoring of the effect in the interventional treatment of vascular diseases, is also contributed. (39, 44, 90, lectures 15, 21, 34, 35, 38)

V. Imaging of lung diseases

Contributions in this area are studies in the field of diffuse parenchymal diseases, pulmonary hypertension and pulmonary thromboembolism and rare diseases of the lung. (2, 34, 37, 47, 56, 79, 83, lectures 18, 33). Of particular importance is the contribution to diagnostics, monitoring of changes in the lungs in COVID-19, incl. participation in the development of an evaluation protocol and a standardized description of the computer-tomographic study in these patients. (54, 59, lectures 48, 51) The first description of magnetic resonance imaging in the lungs in a patient with COVID-19, as well as a proposal for a protocol for conducting the study, is also a contribution. (58)

VI. Scientific contributions in the field of new magnetic resonance imaging techniques.

The main contributions in this regard are in the study of magnetic resonance diffusion (DWI) and its extracranial applications. This is a new method of MR technique that provides functional information. For the first time in Bulgaria, a full overview of the extracranial applications of DWI has been carried out, analyzing the technical aspects of the application of the technique, its application in different diseases, the diagnostic value of the various findings, the ways of interpretation and calculation of the DW coefficient. The analysis was carried out on the basis of its own experience and in accordance with the standards adopted at this stage (33, 34, 35).

Other new techniques first used in Bulgaria since the beginning of 2020 are T1 and T2 mapping techniques, allowing quantitative evaluation of changes in tissues and found mainly in myocardial diseases. The author presents results of his work with these techniques, both in the monograph work (5) and in publications (62, 64, 65, 66) and lectures (49, 50, 52-56).

VII. Scientific contributions in the field of musculoskeletal radiology.

The main contributions in this field is the translation of the 2nd English edition of Illustrated Notes on Musculoskeletal Magnetic Resonance Imaging. The handbook reviews the main applications of MRT in the diagnosis of diseases of the musculoskeletal system. Until now, literature in this field has been lacking in Bulgaria and the translation of one of the most sought-after manuals in Europe is useful for both imaging specialists and traumatologists and helps to unify the interpretation of finds and terminology in this field (13).

VIII. Scientific contributions in the field of urology

The main contributions in this regard are related to the study and comparative analysis of the diagnostic value of MR urography and other magnetic resonance imaging techniques with ultrasound diagnostics in kidney diseases (81), multiparametric magnetic resonance tomography for screening patients with suspected prostate cancer (35, 94, 95, lecture 39), as well as for determining the degree of MRT muscle invasion in bladder tumors. (67) A contribution to multiparametric MRT for the evaluation of prostate cancer is also the introduction into practice of standardised research and description protocols meeting global standards. (94, 95, lecture 39)

IX. Contributions in the field of radiation stress optimization in conducting X-ray studies with a focus on the pediatric population. (48, 51, 60, 86, 88, 89, 96, 99, lectures 36, 37)

In cooperation with a medical physicist, a protocol has been developed for conducting cardiovascular CT tests in children with reduction of radiation dose while maintaining high quality image, for which the center (National heart hospital, Department of Radiology) is certified by IAEA in 2019.

The author participated in a study for optimization the dose for the patient in endovascular and hybrid procedures for lower limb revascularization, as well as in a number of IAEA projects related to radiation load reduction in imaging (RER6032 Strengthening Quality Assurance and Quality Control in Diagnostic X rays IAEA; RER9132 Strengthening Member State Technical Capabilities in Medical Radiation Protection IAEA. Oracle Project Number:3060460 (RER9132); Project RER9/147 "Enhancing Member States' Capabilities for Ensuring Radiation Protection of Individuals Undergoing Medical Exposure"; IAEA Study on use of CT in patient with COVID-19 pneumonia).

4. Educational and scientific and organizational activities

Assoc. prof. Genova has been an associate professor of imaging since 2016. The teaching workload of Assoc. prof. Genova complies with the requirements for training workload for the academic position "Professor".

- The training workload in the Discipline "Basics of Imaging. Radiographic methods" in specialty "X-ray lab" for the 2019/2020 school year is 223.5 h and includes exercises, lectures and exam classes.
- The training workload with internal graduates for acquiring a specialty "Imaging" includes training of graduates 315 teaching hours for 2016, 201.6 teaching hours for 2017, 302.4 teaching hours for 2018, 365.4 teaching hours for 2019. 26 hours and the individual training for 2016/2017 is 128 h.
- The academic teaching hours corresponds to the requirements occupying the academic position and are over 300 hours.

5. Diagnostic work

Professional skills - .Dr Genova has 30 years of service as a physician, of which she has worked as an imaging specialist for 25 years, Since 2014 as an assistant professor and since 2016 as associate professor of imaging at the National Cardiology Hospital and SMDLOD "N.I.PIROGOV".

For its diverse scientific and professional realization, the proficiency in English, German and Russian is also of great importance.

6. Membership of scientific organizations

Assoc. prof. Genova is a member of the following national and international scientific organizations:

- ✓ BULGARIAN RADIOLOGY ASSOCIATION
- ✓ CHAIRMAN OF THE BULGARIAN SOCIETY OF CARDIO-THORACIC RADIOLOGY
- ✓ MEMBER OF THE UNION OF TRANSLATORS
- ✓ ECR (EUROPEAN RADIOLOGY ASSOCIATION), MEMBER OF THE COMMITTEE ON EDUCATION
- ✓ ESCR (EUROPEAN ASSOCIATION OF CARDIORADIOLOGY)
- ✓ ESMRMB (EUROPEAN ASSOCIATION OF MAGNETIC RESONANCE IMAGING IN MEDICINE AND BIOLOGY)

According to the requirements of the NAZID for the academic position "PROFESSOR" Assoc. Prof Genova meets more than the minimum requirements as follows:

Scoreboard of indicators	minimum number of points	indicator	candidate
A	50	1. scientific work for "PhD" degree on the topic: "Assessment of the morphology and function of the right heart after radical repair of	50


		<i>Tetralogy of Fallot and in arrhythmogenic cardiomyopathy with cardiac magnetic resonance".</i>	
B	100	3. monographic book "Cardiomagnetic resonance tomography" (Ed. Arbilis, 2020, Sofia, p. 246, ISBN: 978-619-7063-43-1)	100
Г	60/n	7. Publications and lectures published in scientific journals, referenced and indexed in world-famous databases of scientific information	637.78
	30/n	8. Publications and reports published in scientific journals, non-referenced and non-indexed in world databases of scientific information	186.06
		Published chapters of a collective monographs	120
Д	15	10. Citations or reviews in scientific journals, referenced and indexed in world-famous databases of scientific information or in monographs and collective volumes	75
	5	12. Citation or review in non-peer-reviewed journals with scientific review	30
Е	40	15. Acquired medical specialty	40
	40	19. Management of an international scientific or educational project	30
		Participation in a national scientific/educational projects	45
		Participation in an international scientific/educational projects	60
	40/n	20. Published university textbook or textbook used in the school network	65
	30	22. Training of interns and postgraduates students (seminars and practical education)	60
	550	total	1498.84

On the basis of the above mentioned data on Assoc. prof. Genova, she can be characterized as:

- ✓ built specialist, who has recognized contributions nationally,
- ✓ researcher, capable of independent creative scientific work in the field of imaging diagnostics,
- ✓ An erudite doctor with a wide medical perimeter.

In conclusion, I believe that Assoc. prof. Kamelia Genova meets the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria for acquiring the Academic positions and with the Rules for the Development of the Academic Staff in UMBALSM "N.I.Pirogov" EAD. I propose that the esteemed scientific jury be awarded the academic position "PROFESSOR" in the field of higher education 7. "Health and Sport", professional field 7.1."Medicine" and scientific specialty "Radiology"

02.05.2021



(Prof. Borislav Georgiev, MD PhD)

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1. Research

1.1. Publications.

Assoc. prof. Genova has presented:

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- 3 chapters in co-authorship or as a single author in textbooks
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Associate Professor at the Clinic of Radiology with training of two specialist doctors and head of magnetic resonance tomography sector with training of all physicians in the imaging clinic on the magnetic resonance tomography module.

3. Most significant scientific contributions

Main scientific and scientific and applied contributions

Contributions from the publications are presented, grouped by topic, in connection with the author's work in the fields: cardiomagnetic resonance tomography, computer tomographic diagnosis of cardiovascular diseases, diagnosis of lung diseases, non-invasive assessment of atherosclerotic plaque, neuroradiology, application and specificity of new magnetic resonance imaging techniques, musculoskeletal radiology, urology, rare diseases, radiation protection and optimization of CT protocols in pediatric patients.

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I.I. Scientific contributions in this area are related to: evaluation of the morphology and function of the right heart in diseases involving the predominant right heart (patients with congenital heart disease and cardiomyopathies) and the validation of the method in these diseases. (1, 3, 4, 5, 6, 24, 45, 70, 74, 82, lectures 7, 9, 11, 12)

Original scientific and theoretical contributions:

1. The mechanisms of damage to the right ventricle in patients after radical correction of the tetralogy of Fallot (TF) and with arrhythmogenic right ventricular cardiomyopathy based on the results of cardio MRT studies were analyzed.

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Confirmatory contributions:

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Scientific and applied contributions:

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communications are scientifically applied in connection with the study and application of cardio MRT in cardiovascular disease, as a new method for the country. The role of the method in different groups of diseases, the specifics and technique of the study, the different types of findings and their interpretation, the indications for the application of cardio MRT are discussed and analyzed. (5-9, 12, 16-18, 21, 22, 41, 43, 57, 61, 64, 67, 68, lectures 1, 4-6, 8, 13, 16, 17, 23, 26-30, 32, 40-43, 46, 49, 50, 54, 56)

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The main contributions in this regard are applied, educational, related to the study and description of rare syndromes and diseases and the application of new imaging techniques [9, 17, 24, 25, 26, abstracts 1, 3, 4, 12, 13].

1. They are described synthesized as techniques, diagnostic value and application and illustrate the different imaging methods (conventional radiology, angiography, computed tomography, magnetic resonance tomography, radioisotope methods) used for diagnosis in neurology. (15, 20)
2. Describes, overview and discussion of our experience in diagnostics in several rare clinical cases - Charles Bonnet syndrome; basilar artery fenestration; spinal epidural lipomatosis; body dysgenesis; two spontaneous spinal epidural hematomas; Persson heart attack; diagnosis of brain death and current donor problems. (29, 36, 38, 41, 47, 54, 77, 78, 85, 87)
3. Description and discussion of the possibilities of new magnetic resonance imaging techniques for the diagnosis and characterization of brain tumors and tumor-like lesions - diffusion (DWI) and diffusion tensor imaging (DTI), contrast and bolus perfusion (DCE, DSC, ASL) and spectroscopy (MRS). (56)
4. An analysis of the modern imaging of processes in the third ventricle is presented. (23)

IV. Scientific contributions in the field of imaging of vascular diseases

A contribution in this area is the description and analysis of methods of imaging of diseases of the aorta and peripheral vessels, commenting on the imaging methods, protocols and main findings in different types of pathology. (12, 21, 19, 32, 42, 98, lectures 2, 3) The study of rare diseases of the vessels such as Takayasu arteritis, as well as work in the field of planning and monitoring of the effect in the interventional treatment of vascular diseases, is also contributed. (39, 44, 90, lectures 15, 21, 34, 35, 38)

V. Imaging of lung diseases

Contributions in this area are studies in the field of diffuse parenchymal diseases, pulmonary hypertension and pulmonary thromboembolism and rare diseases of the lung. (2, 34, 37, 47, 56, 79, 83, lectures 18, 33). Of particular importance is the contribution to diagnostics, monitoring of changes in the lungs in COVID-19, incl. participation in the development of an evaluation protocol and a standardized description of the computer-tomographic study in these patients. (54, 59, lectures 48, 51) The first description of magnetic resonance imaging in the lungs in a patient with COVID-19, as well as a proposal for a protocol for conducting the study, is also a contribution. (58)

VI. Scientific contributions in the field of new magnetic resonance imaging techniques.

The main contributions in this regard are in the study of magnetic resonance diffusion (DWI) and its extracranial applications. This is a new method of MR technique that provides functional information. For the first time in Bulgaria, a full overview of the extracranial applications of DWI has been carried out, analyzing the technical aspects of the application of the technique, its application in different diseases, the diagnostic value of the various findings, the ways of interpretation and calculation of the DW coefficient. The analysis was carried out on the basis of its own experience and in accordance with the standards adopted at this stage (33, 34, 35).

Other new techniques first used in Bulgaria since the beginning of 2020 are T1 and T2 mapping techniques, allowing quantitative evaluation of changes in tissues and found mainly in myocardial diseases. The author presents results of his work with these techniques, both in the monograph work (5) and in publications (62, 64, 65, 66) and lectures (49, 50, 52-56).

VII. Scientific contributions in the field of musculoskeletal radiology.

The main contributions in this field is the translation of the 2nd English edition of Illustrated Notes on Musculoskeletal Magnetic Resonance Imaging. The handbook reviews the main applications of MRT in the diagnosis of diseases of the musculoskeletal system. Until now, literature in this field has been lacking in Bulgaria and the translation of one of the most sought-after manuals in Europe is useful for both imaging specialists and traumatologists and helps to unify the interpretation of finds and terminology in this field (13).

VIII. Scientific contributions in the field of urology

The main contributions in this regard are related to the study and comparative analysis of the diagnostic value of MR urography and other magnetic resonance imaging techniques with ultrasound diagnostics in kidney diseases (81), multiparametric magnetic resonance tomography for screening patients with suspected prostate cancer (35, 94, 95, lecture 39), as well as for determining the degree of MRT muscle invasion in bladder tumors. (67) A contribution to multiparametric MRT for the evaluation of prostate cancer is also the introduction into practice of standardised research and description protocols meeting global standards. (94, 95, lecture 39)

IX. Contributions in the field of radiation stress optimization in conducting X-ray studies with a focus on the pediatric population. (48, 51, 60, 86, 88, 89, 96, 99, lectures 36, 37)

In cooperation with a medical physicist, a protocol has been developed for conducting cardiovascular CT tests in children with reduction of radiation dose while maintaining high quality image, for which the center (National heart hospital, Department of Radiology) is certified by IAEA in 2019.

The author participated in a study for optimization the dose for the patient in endovascular and hybrid procedures for lower limb revascularization, as well as in a number of IAEA projects related to radiation load reduction in imaging (RER6032 Strengthening Quality Assurance and Quality Control in Diagnostic X rays IAEA; RER9132 Strengthening Member State Technical Capabilities in Medical Radiation Protection IAEA. Oracle Project Number:3060460 (RER9132); Project RER9/147 "Enhancing Member States' Capabilities for Ensuring Radiation Protection of Individuals Undergoing Medical Exposure"; IAEA Study on use of CT in patient with COVID-19 pneumonia).

4. Educational and scientific and organizational activities

Assoc. prof. Genova has been an associate professor of imaging since 2016. The teaching workload of Assoc. prof. Genova complies with the requirements for training workload for the academic position "Professor".

- The training workload in the Discipline "Basics of Imaging. Radiographic methods" in specialty "X-ray lab" for the 2019/2020 school year is 223.5 h and includes exercises, lectures and exam classes.
- The training workload with internal graduates for acquiring a specialty "Imaging" includes training of graduates 315 teaching hours for 2016, 201.6 teaching hours for 2017, 302.4 teaching hours for 2018, 365.4 teaching hours for 2019. 26 hours and the individual training for 2016/2017 is 128 h.
- The academic teaching hours corresponds to the requirements occupying the academic position and are over 300 hours.

5. Diagnostic work

Professional skills - .Dr Genova has 30 years of service as a physician, of which she has worked as an imaging specialist for 25 years, Since 2014 as an assistant professor and since 2016 as associate professor of imaging at the National Cardiology Hospital and SMDLOD "N.I.PIROGOV".

For its diverse scientific and professional realization, the proficiency in English, German and Russian is also of great importance.

6. Membership of scientific organizations

Assoc. prof. Genova is a member of the following national and international scientific organizations:

- ✓ BULGARIAN RADIOLOGY ASSOCIATION
- ✓ CHAIRMAN OF THE BULGARIAN SOCIETY OF CARDIO-THORACIC RADIOLOGY
- ✓ MEMBER OF THE UNION OF TRANSLATORS
- ✓ ECR (EUROPEAN RADIOLOGY ASSOCIATION), MEMBER OF THE COMMITTEE ON EDUCATION
- ✓ ESCR (EUROPEAN ASSOCIATION OF CARDIORADIOLOGY)
- ✓ ESMRMB (EUROPEAN ASSOCIATION OF MAGNETIC RESONANCE IMAGING IN MEDICINE AND BIOLOGY)

According to the requirements of the NAZID for the academic position "PROFESSOR" Assoc. Prof Genova meets more than the minimum requirements as follows:

Scoreboard of indicators	minimum number of points	indicator	candidate
A	50	1. scientific work for "PhD" degree on the topic: "Assessment of the morphology and function of the right heart after radical repair of	50

		<i>Tetralogy of Fallot and in arrhythmogenic cardiomyopathy with cardiac magnetic resonance".</i>	
B	100	3. monographic book "Cardiomagnetic resonance tomography" (Ed. Arbilis, 2020, Sofia, p. 246, ISBN: 978-619-7063-43-1)	100
Г	60/n	7. Publications and lectures published in scientific journals, referenced and indexed in world-famous databases of scientific information	637.78
	30/n	8. Publications and reports published in scientific journals, non-referenced and non-indexed in world databases of scientific information	186.06
		Published chapters of a collective monographs	120
Д	15	10. Citations or reviews in scientific journals, referenced and indexed in world-famous databases of scientific information or in monographs and collective volumes	75
	5	12. Citation or review in non-peer-reviewed journals with scientific review	30
Е	40	15. Acquired medical specialty	40
	40	19. Management of an international scientific or educational project	30
		Participation in a national scientific/educational projects	45
		Participation in an international scientific/educational projects	60
	40/n	20. Published university textbook or textbook used in the school network	65
	30	22. Training of interns and postgraduates students (seminars and practical education)	60
	550	total	1498.84

On the basis of the above mentioned data on Assoc. prof. Genova, she can be characterized as:

- ✓ built specialist, who has recognized contributions nationally,
- ✓ researcher, capable of independent creative scientific work in the field of imaging diagnostics,
- ✓ An erudite doctor with a wide medical perimeter.

In conclusion, I believe that Assoc. prof. Kamelia Genova meets the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria for acquiring the Academic positions and with the Rules for the Development of the Academic Staff in UMBALSM "N.I.Pirogov" EAD. I propose that the esteemed scientific jury be awarded the academic position "PROFESSOR" in the field of higher education 7. "Health and Sport", professional field 7.1."Medicine" and scientific specialty "Radiology"

02.05.2021


(Prof. Borislav Georgiev, MD PhD)